

Restricted



NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

EDITOR - CAPTAIN W. W. HALL, (MC), U.S.NAVY

Vol. 2

Friday, August 6, 1943

No. 3

The Minor Venereal Diseases: The assignment of naval medical officers to tropical and subtropical areas in which the so-called minor venereal diseases are prevalent prompts the publication of the following information. Much of the confusion surrounding the minor venereal infections is due to the unfortunate similarity of the names lymphogranuloma venereum (lymphogranuloma inguinale) and granuloma inguinale. The essential difference between these two conditions is that lymphogranuloma venereum is a disease of the lymph nodes; whereas granuloma inguinale is a granulomatous disease of the skin and subcutaneous tissues.

LYMPHOGRANULOMA VENEREUM (lymphogranuloma inguinale, lymphopathia venereum) most frequently is characterized by purulent inguinal lymphadenitis. Small papular or vesicular primary lesions have been described, but these usually are so insignificant as to be readily overlooked by the patient. Usually several inguinal lymph nodes are involved, with matting together of the nodes. Suppuration is delayed. The disease is caused by a specific virus; is spread by sexual contact; and has an incubation period of one to four weeks. Constitutional symptoms, such as fever, malaise, weight loss and arthralgia may be present. Commonly in the female and rarely in the male, the infection spreads to the perirectal lymphatics, there to enter a chronic phase by producing rectal stricture.

Diagnosis is established by: (1) the clinical picture; and (2) the exclusion of other causes for inguinal lymphadenitis (including syphilis and chancre). An intradermal test with Frei antigen is useful in confirming the diagnosis.

Treatment is with sulfonamides (4 to 6 grams per day). Fluctuant bubos should be aspirated, not incised or excised.

GRANULOMA INGUINALE is a chronic genito-infectious disease characterized by gradually progressive ulcerations on and about the genitalia, including the scrotum and inguinal regions. The ulcerated areas are beefy-red in color, and exude a chocolate-colored serosanguinous discharge. Small islets of healing frequently are dispersed over extensive areas of ulceration. The lymph nodes are not involved per se. ?!

Diagnosis is established by: (1) the clinical picture; and (2) by finding Donovan bodies (small diploid coccobacillus-like cytoplasmic inclusions) within mononuclear cells from scrapings of the periphery of the lesion.

The treatment is with antimony, given intravenously thrice weekly as a 1% solution of tartar emetic, in doses increasing from 3 to 10 cc. "Fuadin," another antimony compound, may also be used. It is essential that treatment be continued for three to four months after healing has occurred, otherwise relapse is frequent.

CHANCROID (soft chancre) is an acute genito-infectious disease due to the Ducrey bacillus, and characterized by the appearance of one or more dirty, indolent ulcerative lesions, usually upon the genitalia; and by purulent inguinal lymphadenopathy. When the penile ulceration is the more obvious manifestation, the condition is a chancroidal ulcer; but when the bubo overshadows the penile lesion, the term chancroidal bubo applies. Constitutional symptoms such as fever, malaise and arthralgia may be present. The incubation period is short - one to six days following exposure. Transmission is almost invariably by sexual intercourse.

Diagnosis is established by: (1) the clinical picture; and (2) the exclusion of syphilis and other venereal infections. An intradermal test with Ducrey vaccine (the Ito test), similar in use to the Frei test for lymphogranuloma venereum, can be used to confirm the diagnosis.

The treatment is with sulfonamides (4 to 6 grams per day). So specific are these drugs for chancroidal infection that if healing is not prompt, the presence of other conditions should be suspected. Fluctuant bubos should be aspirated through a needle of large caliber, rather than drained by incision.

Several points deserve emphasis:

(1) Any of the above-mentioned venereal infections may co-exist with syphilis. Repeated dark-field examinations are necessary, and the greatest care taken to differentiate T. pallidum from the many other spirochetes which invade genital ulcerations from other causes. Transient false positive serological tests for syphilis are known to occur with both chancroid and lymphogranuloma venereum, and a diagnosis of syphilis cannot be made on the basis of serodiagnostic tests alone unless these tests remain positive until the acute lesion has subsided, and for a period of approximately three months thereafter.

(2) A positive Frei test for lymphogranuloma venereum or a positive Ito test for chancroid means that the patient has or has had in the past the specific disease for which the test was performed. These are allergic reactions, similar to the tuberculin test.

(3) In the differential diagnosis of inguinal lymphadenitis, the following characteristics will be found helpful:

(a) Syphilis. Nodes are small, discrete, rubbery and non-tender.

- (b) Chancroidal bubo. Usually a single large node with local heat, tenderness and reddening of the overlying skin. Suppuration is rapid. A penile lesion is usually present.
- (c) Lymphogranuloma venereum. Usually involvement of several nodes with sufficient perilymphadenitis to cause matting together of the nodes and adherence to the overlying skin. Local heat, tenderness and reddening occur. Suppuration is slower than with the chancroidal bubo. The primary penile lesion ordinarily is absent.

For a more comprehensive discussion of the differential diagnosis of genital lesions, see: Leider, M. - A Routine for the Definitive Investigation of Genital Lesions, U.S. Nav. Med. Bull. 41:278, Jan. '43. (F.W.R.)

* * * * *

Combatant Record of Sulfonamide Dosage: The Committee on Surgery of the National Research Council transmits the approved recommendation of the Subcommittee on Surgical Infections as follows: "That the field medical record of each wounded combatant indicate time and dosage of local or general sulfonamide therapy." The desirability of such recording can hardly be questioned, particularly if the records are kept complete. Such a record would aid in determining further dosage required, would assist in the planning of therapy should sulfa-resistant organisms be encountered, and in the alteration of therapy should drug sensitization be encountered.

* * * * *

The Relation of Sunlight to Desert Sores: The author, a Royal Army Medical Corps Officer, summarizes as follows:

"It has been shown that the desert sores of this series bore a marked relation to exposure to sunlight."

"It has been emphasized that changes are observable in the exposed skin of those who are susceptible to sunlight. It was in the exposed areas that the sores appeared sometimes following trauma; in other cases, however, a history of trauma was not obtainable."

"Small clear vesicles, resembling minute burns or scalds, were observed to be the precursors of many of the sores. In one such case these vesicles may have resulted from insect bites, in another they probably followed minor trauma. In the majority of instances no definite etiological factor could be elicited; the possibility that sunburn contributed the final trauma cannot be discounted."

"It has been observed that, in the desert, various factors contribute toward an abnormal exposure to sunlight."

ASLT-187-

He discusses the relation of trauma to the occurrence of sores, complications, relation to the season, etc., and adds a few notes on preventive treatment.

He suggests that patients wear their sleeves down, wear long trousers, use vanishing cream or oil, preferably containing a small amount of antiseptic, for the protection of the hands, etc....(Henderson, British M. J., May 29, '43.)

* * * * *

Detergents for the Removal of Fuel Oil, Grease and Dirt from Burns: The use of detergents for the removal of fuel oil, grease and dirt from burns is not advised in the first-aid phase of treatment. (See Bureau of Medicine and Surgery Form Letter of January 21, 1943, on the "Treatment of Burns.") Light fuel oil, employed by the Navy, is removed readily by detergents alone, but heavy fuel oil and grease, particularly when embedded in the tissues are removed with more difficulty and require preliminary cleansing with a solvent followed by final washing with detergents. Experiments on solvents and detergents for removal of oil and grease lead to the recommendation by a research group to the Committee on Burns of the National Research Council of the following solvents: lard, glyceryl monooleate, or "NUJOL." Preliminary use of a solvent allows the removal of considerable amounts of heavy oil or heavy grease with minimum pain; in fact, these mild solvents actually give some degree of relief from the pain of burns because of the protective coating against access of air.

The detergents recommended for the removal of light fuel oil and the concentrations in which they are effective are as follows: ORVUS, 5% solution, NINOL-737, 2% solution, NINOL-400, 2% solution, and a mild bar soap such as "IVORY." If sea water must be used, ordinary bar soaps are ineffective and one of the other detergents on the list must be selected. These detergent solutions must be used in conjunction with the above-mentioned solvents for removal of heavy oil and grease, and should be used with sterile gauze pads soaked in the fluid. Finally, the burn should be rinsed in sterile water or physiological saline for removal of the excess detergent.

Another detergent under the trade name of "HYPEX" was found to be moderately satisfactory but less effective than the others. Salt-water bar soap is effective for the removal of fuel oil from the normal, intact skin, but inferior for the removal of oil and grease from burns as it induces undue irritation. (E.W.B.)

* * * * *

Prevention of Accidents to Members of Armed Forces: It has been reported that enlisted men in dimout areas are in serious danger of being injured by automobile traffic, since in their blue uniforms walking by the side of the road, they are often hardly visible.

To avoid this danger a material known as "scotchlite" has been developed for arm or leg bands. The base of the material is a drill cloth on which, in a resinous base, small spherules of glass are embedded. Light striking this material makes it luminous by "reflex reflector principle."

The cloth is available at the Minnesota Mining and Manufacturing Company, Forest and Fanquier Avenues, St. Paul, Minnesota. This material will eventually have a varied application: for aeroplanes, life rafts and other life-saving equipment. (L.L.A.)

Malaria, Suppressive Treatment: Atabrine Concentration in Plasma: In a preliminary report on this subject Dr. Shannon, working under the auspices of the National Research Council, records some findings of practical interest.

1. In whole blood the plasma carried only about one-half as much atabrine as the erythrocytes and only one-four hundredth (1/400) of the concentration in the leucocytes. He assumes that the antimalarial activity of atabrine is related to its concentration in the plasma rather than its concentration in whole blood.

2. Using medical student volunteers, he determined the plasma concentrations achieved on several dosage schedules which have been used or may be used for suppressive treatment, as follows:

- (a) 0.2 gm. on Tuesday and Thursday; weekly dose 0.4 gm.
- (b) 0.1 gm. on Tuesday, Wednesday, Thursday and Friday; weekly dose 0.4 gm.
- (c) 0.05 gm. on the six weekdays and 0.1 gm. on Sunday; weekly dose 0.4 gm.
- (d) 0.2 gm. on Wednesday, Thursday and Friday; weekly dose 0.6 gm.
- (e) 0.1 gm. on the six weekdays; weekly dose 0.6 gm.

3. Although the study has not yet been completed, he makes certain general statements which he believes probably will not require modification.

(a) All the above dosage schedules will produce a progressive increase in the plasma atabrine concentration for a period of about six weeks. With a weekly dosage of 0.4 gm. the concentration levels off at a certain point and with a weekly dosage of 0.6 gm. at about twice that level. The maximum level attained by the weekly dosage of 0.4 gm. (in the sixth week) is crossed in the third week by the weekly dosage regime of 0.6 gm.

(b) The total weekly amount of atabrine is a more important factor in the plasma concentration than the dosage schedule. However, with small daily dosage there is less daily variation in the concentration, as one would expect.

(c) On any dosage regime there will be a wide difference in the plasma concentrations achieved by various individuals. The cause of this is not known but difference in absorption of the drug, rate of degradation, and rate of excretion probably are causal factors. It is also probable that some of the clinical breakthroughs may be accounted for by this failure on the part of some individuals to achieve the expected plasma atabrine concentration.

(d) The number of subjects studied was not considered to be large enough to yield an exact figure on the concentrations which are achieved by each of the schedules studied. However, it appears that dosage schedules administering 0.6 gm. per week achieve levels which are as high during the third and fourth week as those which are ultimately attained on weekly dosage levels on 0.4 gm.

4. One group of Dr. Shannon's volunteers was started on 0.2 gm. on five consecutive days (a total of 0.1 gm.) followed by the schedule of 0.05 gm. on the six weekdays and 0.1 gm. on Sunday as in schedule (c) above. In this group the plasma concentration rose sharply and at the end of a week dropped down to the level of the other groups on 0.4 gm. weekly. The sharp initial rise was considered

to be important in indicating that the maximal antimalarial protection conferred by a given dosage regime may be achieved quite rapidly by giving larger doses of atabrine over short periods of time. This finding may be of use in individuals who, by virtue of circumstances, are removed from suppressive therapy for a considerable period of time. It was suggested that such individuals may be returned promptly to the point of maximal protection. Other circumstances which may be suited to the use of such a dosage schedule are a changeover from quinine to atabrine suppressive therapy or a situation where it is deemed advisable to obtain maximal antimalarial protection in a short period of time subsequent to entry into a hyperendemic area.

5. Comments: It should be noted that the volunteers for this study did not have malaria and that the object of the investigation was mainly to determine plasma atabrine concentration. Whether the weekly dose should be 0.4 gm. or 0.6 gm. for effective suppressive treatment remains to be determined experimentally and in the field. If 0.4 gm. per week is reasonably effective one may hesitate to go to the 0.6 gm., even though this dosage has been used and apparently without harmful effect. (E.G.H.)

* * * * *

Botanical material from the Malaysian-Polynesian regions may be submitted for identification and report to E.D. Merrill, Administrator of Botanical Collections and Director of the Arnold Arboretum, Harvard University, Boston.

Dr. Merrill is the author of a War Department Technical Manual entitled, "Emergency Food Plants and Poisonous Plants of the Islands of the Pacific." The Bureau of Medicine and Surgery, Navy Department, has purchased a number of copies of the Manual which are being distributed as needed.

* * * * *

Penicillin-Fast Bacteria: Inadequate dosage of penicillin, if prolonged, may develop strains of bacteria which are resistant to the action of penicillin. (See Bureau of Medicine and Surgery Form Letter on penicillin reprinted in Bumed News Letter of July 23, '43.)

Schmidt and Sesler report the experimental development of penicillin-resistant strains of pneumococci by the use of inadequate penicillin dosage. In their work resistance to penicillin persisted after as many as 30 serial passages through animals, demonstrating that penicillin resistance is a rather stable hereditary characteristic. These penicillin-resistant organisms were not sulfapyridine-resistant. (Proc. Soc. Exp'tl. Biol. & Med., Apr. '43.)

* * * * *

Sulfadiazine Prophylaxis in an Epidemic of Scarlet Fever: Watson et al summarize their findings as follows: "Summary - 1. An epidemic of scarlet fever due to hemolytic streptococci (group A, type 19) occurred at a United States naval station. 2. Sulfadiazine in prophylactic doses of 1 Gm. daily effectively controlled this epidemic and caused a pronounced reduction in the number of daily

sick calls due to other respiratory complaints. 3. Among several thousand men treated only three had rashes due to sulfadiazine, and no major toxic reactions were observed. 4. Sufficient evidence has been obtained to justify the use of this drug in controlling epidemics of streptococcic infections of the respiratory tract. (J.A.M.A., July 10, '43.)

* * * * *

Burn-Shock - Sodium Chloride and Liver Fraction Found to be of Benefit in Prevention: Prinzmetal et al reporting on a study of burn-shock in animals state that certain commercial liver extracts contain a substance, not identical with the antianemia principle, which is helpful in the prevention of shock in experimentally scalded rats and mice. They also report that 0.9 per cent sodium chloride, injected intraperitoneally, in amounts equivalent to five or ten per cent of the body weight is definitely effective against burn-shock when given either soon after or 30 minutes prior to the trauma. (J.A.M.A., July 10, '43.)

* * * * *

The latter observation supports Rosenthal's observation reported in the Bumed News Letter of March 5, '43, on the remarkable protective effect of normal saline administered orally to scalded mice.

* * * * *

Present Concept of the Epidemiology of Poliomyelitis: Twenty years' study has produced virtually no change in concept of poliomyelitis and no information essential for practical control of the disease. However, certain observations regarding the probable portal of entry of the virus and transmission of the disease have been made. In 1933 it was still the opinion of many investigators that the olfactory tract was a common portal of entry of the virus in human poliomyelitis. Since then numerous examinations from fatal human cases have shown that infection seldom occurs by way of the olfactory tract but mainly through mucous membrane of the pharyngeal or the lower gastro-intestinal tract, or both. The recovery of virus from sewage as well as from fresh stools suggested that poliomyelitis might be water-borne. Neither experimental nor epidemiological investigations have produced any convincing evidence that poliomyelitis is transmitted by an insect vector or that reservoirs of infection are to be found in any lower animals. The existence of several strains of poliomyelitis virus which show some immunological differences has been revealed. The impression that the paralytic case or the occasionally recognized abortive case does not represent the extent of active infection in a family or other aggregations of persons living in close contact with each other has been strengthened by several studies in recent years. It appears that abortive or mild infections which do not result in paralysis are the rule rather than the exception in family and other groups, especially during epidemic periods. (Dauer, Pub. Health Rep., June 18, '43.)

* * * * *

Protein Smooths the Curve: The typical American breakfast, one relatively high in carbohydrate and low in protein and fat, predisposes to midmorning hypoglycemic symptoms. Similarly a luncheon of relatively high carbohydrate predisposes

to a dip in the blood sugar curve in the midafternoon. Such fluctuations are often accompanied by symptoms of fatigue, weakness or irritability. Though the low points in the blood sugar curve which occur two to three hours after meals may be balanced by carbohydrate ingestion at that time, such a routine may produce a vicious circle with further blood sugar dips and an exaggeration of such tendency in the future. Low blood sugar does not follow a meal rich in protein or one properly balanced between carbohydrate, protein and fat.

Numerous authors have pointed out the value of diets high in protein and fat in the treatment of patients with spontaneous hypoglycemia. Other advantages of meals which contain adequate protein are a prolonged sense of well being and increase in metabolic rate which follow protein ingestion.

Meals then, can be properly balanced to eliminate undesirable fluctuation in blood sugar curve, to maintain the prolonged sense of well being and a desirable increase in metabolic rate. For obese individuals skin milk and cottage cheese may be advantageously used as sources of protein. ("A Comparison of the Metabolic Effects of Isocaloric Meals," Thorn et al, Ann. Int. Med., June '43.)

* * * * *

Bullet Wounds: It is important to remember, when examining bullet wounds, that widespread devastation, involving the shattering of bone and extensive destruction of soft tissues, may be caused, under certain circumstances, by an ordinary rifle bullet. At ranges below six hundred yards the bullet, to which a spinning movement is imparted by the grooves of the rifle barrel, tends to wobble, like a top, before settling down to steady flight. This increases the effect of impact, which is further magnified by another factor, centrifugal force, exerting, at that stage, its maximum disruptive effect. Such a wound may therefore give the impression that it has been inflicted by an expanding or explosive bullet, or even by a shell splinter. At long ranges when, although centrifugal force is diminished, wobble and other deviations of flight are increasing, lacerated and irregular wounds are again encountered, and spent bullets, or those which have ricocheted from rocks and stones, may produce wounds of similar or even more serious character. It is only at intermediate ranges that the classical picture, a neat round hole marking the entrance wound and a somewhat larger one the exit, can be observed. To illustrate the explosive effects at shorter ranges, experiments were carried out by firing a rifle bullet into a mass of clay. It was found that the bullet made a fairly sharp hole on entrance, passed on for a few inches, and then suddenly dispersed the clay to produce a cavity about a foot in diameter, the bullet itself breaking into fragments. After other factors had been excluded by further experiment, it seemed clear that these remarkable effects must be attributable to the centrifugal force of the bullet, conditioned by velocity, wobble and spin.

On examination of a bullet wound the entrance can be identified by the fact that a zone of denuded epithelium always surrounds the orifice. An exit wound is free from signs of powder, and, in most cases, it is torn from within outward and larger in size than the bullet which caused it. Direction may be deduced from the relative positions of entrance wound, tract, and exit wound. In drawing deductions, allowance must be made for the different relationships of the parts of the body in movement, and the possibility of deflection.

Fragments of bullets may be embedded in the tissues, and their examination may yield valuable information. Bullets vary enormously. In high velocity weapons they consist of a soft lead core, enclosed by some harder metal such as copper or steel. For special purposes the construction is modified. An armour-piercing bullet has a hard steel core enclosed in an envelope with an intervening layer of lead; a tracer bullet, which is of similar type, includes a quantity of barium peroxide and magnesium in its composition. Phosphorus bullets are also employed.

With regard to shape, short bullets with rounded tips are usual for revolvers, Tommy guns and Sten guns; long bullets, cylindrical or streamline, with pointed ends, for machine guns and rifles.

When examining bullet wounds it must be remembered that two widely held assumptions are fallible; the first, that an entry wound is always small and an exit wound always large; the second, that a large entry wound points to the use of explosive or dum-dum bullets. With rifle or machine gun fire at close range a large entry wound is the rule. (Army Med. Dept. Bull., Apr. '43 - issued by War Office, London.)

* * * * *

Experimental Production of Stones in the Bladder: Davalos reports producing stones in the urinary bladder of rabbits by instilling an alcoholic solution of salicylic acid daily for four days into the urinary bladder in order to produce a chemical cystitis, and instilling a culture of *Proteus bacilli* intravesically every fifth day in order to maintain a chronic infection. (J. Urology, May '43.)

* * * * *

The Blood Pressure in Essential Hypertension: Effect of Several Reputedly Hypotensive Drugs: The drugs used in this study were selected with a view to obtaining at least one representative of each of several much favored types used in attempts at regulation of blood pressure, namely, the methylated xanthine derivatives, theobromine (3.7 dimethylxanthine), a prepared combination of theobromine and phenobarbital sodium (theominal), a proprietary arterial antispasmodic agent (iocarpol), theophylline with ethyl diamine (aminophylline), erythrol tetranitrate and phenobarbital. Two further medicaments, a proprietary hypotensive agent, known as hepvisc, and a proprietary vasodilator, known as allimin, completed the list of drugs used. Potassium thiocyanate was omitted because of the technical difficulties involved.

"On the basis of this study, it may be reasonably concluded that the drugs referred to herein, when administered continuously in optimal dosage for periods of four weeks, do not possess any significant hypotensive effect on the blood pressure of hypertensive patients. Furthermore, the effectiveness of chemically similar drugs, of which the chosen preparations may be considered representative samples, seems open to question." (Kapernick, Proc. Staff Meet., Mayo Clinic, June 16, '43.)

* * * * *

Ship's Coat: The Navy has scraped a lot of paint off parts of ships to reduce the fire hazard. What to put in its place? Last week it became known that the Navy has an answer: a fireproof ceramic (glazed) coating that seems to have many advantages.

Called Seaporcel, a silica product, the coating is first sprayed, then fired on the surface of metal. The Navy and Maritime Commission are covering bulkheads, doors, crews' quarters and galleys with it. It does not char, chip or crack, can be cut or tack-welded like uncoated metal, and actually strengthens light steel sheets to which it is applied - a quality which may make it possible to build lighter ships. Whether Seaporcel can be used on a ship's hull is still a moot question; the Navy is testing to see whether barnacles will grow on it.

The fact that bluejackets will like Seaporcel is obvious - it eliminates the sailor's perennial occupation of chipping off old paint and brushing on new. Seaporcel keeps its finish almost indefinitely against all kinds of weather, can be cleaned with a damp cloth. (Time, July 19, '43.)

* * * * *

Sulfonamide Ointments: Strakosch and Clark conclude from an investigation of sulfonamide ointments that: "There is no correlation between the penetration of sulfanilamide and the type of ointment base, at least in regard to whether the base is of the water-in-oil or the oil-in-water emulsion type."

"Increasing the concentration of sulfanilamide in ointment bases above 1% has little effect on tissue levels of sulfanilamide reached."

"Only a given quantity of sulfanilamide is taken up by the skin from the bases within a given time period, and this amount cannot be increased by increasing the concentration in the ointment." (Amer. J. M. Sciences, Apr. '43.)

* * * * *

Universal Group "O" Donors in Emergency Blood Transfusions: The authors conclude there should be a more widespread use of group "O" as universal donors under combat conditions, since it has been shown in private hospitals that the use of a universal donor is warranted.

The exclusion of the donors with high iso-agglutinin titer will add another safety factor to the use of group "O" as universal donors.

Some reactions occur due to the extrinsic factors of improperly cleansed equipment and minor faults in technic of the operator.

Great care must be taken in re-typing all listed group "O" individuals before being used as donors, since in their series there was an error of about five per cent in classification.

The authors recommend that further work be done by other ships along this line, with particular care in the elimination of incorrectly classified donors, and donors of high titer iso-agglutinins. (Weinert & Oldham, Atlantic Fleet Med. N.L., Apr. '43.)

* * * * *

In the operation of the Blood Bank at the Naval Medical Center type "O" blood is obtained from the Red Cross Donor Center. Little attention is paid to the titer of group "O" blood, although crossmatching is carried out before each of the transfusions. The use of whole type "O" blood as recommended in the above abstract is quite sound and should prove lifesaving in many instances. The British and Russians have followed this method in front-line operations for at least two years and recommend it highly, particularly in cases which have suffered considerable hemorrhage. (L.R.N.)

* * * * *

Wet Clothing Beneficial in a Hot Environment: Investigators at the Harvard Fatigue Laboratory found that in an excessively hot environment men were more comfortable in wet clothing than in the nude or in dry clothing. Water intake, sweat and salt excretion were decreased. Unacclimatized men in wet clothing were protected to a surprising degree. It is not economical to use potable water for wetting down, since more water is required for a given amount of cooling than when it is taken internally. Wetting down should only be resorted to when sufficient water is available and may be done with salt as well as fresh water. (L.L.A. - F.C.H.)

how about schistosomiasis?

* * * * *

Limitations of X-ray Film Inspection of Chest: X-ray film inspection of the chest, alone, is an extremely unsatisfactory procedure for the following reasons: (1) It detects possible evidence of tuberculous infection in not more than one-fourth to one-third of the persons actually infected. (2) It aids one in visualizing only 75% of the lungs. (3) It misses extrathoracic lesions which may be spilling large numbers of tubercle bacilli in urine or through discharging sinuses. (4) Many cases are on record with tubercle bacilli in the sputum, whose X-ray films reveal no evidence of disease in the lungs. (5) It does not permit a diagnosis of etiology of pulmonary lesions, since shadows cast by tuberculosis often are identical with those cast by other diseases. (Myers, J. School Health, May '43.)

* * * * *

Simultaneous Carcinoma and Tuberculosis of the Stomach in a Case of Pernicious Anemia: In theory the stomach is protected from the invasion of Koch's bacillus by virtue of (1) gastric acidity, (2) intact mucosa, (3) scarcity of lymphoid structures in the gastric wall, (4) rapid emptying time and (5) inherent resistance. The introduction of liver therapy in pernicious anemia has prolonged the lives of patients and gastric carcinoma in these cases is on the increase. Experience supports Broders' contention that carcinoma and tuberculosis are not antagonistic. (White, Proc. Staff Meet. Mayo Clinic, June 2, '43.)

Dental First Aid for Submarines, Destroyers, or Any Ship Without a Dental Officer: Pharmacist's mates or hospital corpsmen on independent duty should become familiar with dental first-aid measures. Pain or discomfort in the mouth or about the face may keep a man from prosecuting to the fullest extent the duties of his station. In order to keep each man available when he is needed, the following dental first aid treatments are advised. Ingenuity, personal judgment and common sense must be exercised in their application.

1. Toothache.

Symptoms are experienced upon application of heat and then cold, or application of sweets. Pain may or may not be localized in the tooth involved. Treatment may consist of applying a sedative such as eugenol or oil of cloves, or Dentalone.

(a) As much decay as possible is removed from the cavity and a piece of cotton saturated with a sedative is placed loosely in the cavity.

(b) A paste consisting of zinc oxide and eugenol may be spatulated together and inserted into the cavity of the tooth concerned, after the debris has been removed.

(c) The above treatments are temporary, and the patient should consult a dental officer as soon as possible.

2. Severe Toothache.

(a) When the patient experiences pain in the ear, temporal or facial region, and this pain increases in intensity when he lies down, there is an indication that decay has reached into the nerve chamber or pulp. There is usually a sense of pain on compression or when the tooth is tapped. The carious tooth may be located by the direction of the pain and when found the cavity should be cleaned of debris as much as possible. A pledget of cotton dipped into the sedative mentioned and placed in the cavity should give relief from pain. If an X-ray is not available and the use of warm salt water as a mouth wash does not relieve the pain, one A.P.C. plus $\frac{1}{4}$ grain Codeine repeated in four hours may be administered if necessary.

(b) Where decay has been extensive enough to produce death of the dental pulp and drainage is not present, the supporting tissues may swell. If the cavity is visible, clean out as much debris as possible even going into the pulp chamber if necessary. If impossible to accomplish this, hot salt water rinses may be used (one-half teaspoon of salt and one teaspoon magnesium sulphate to a glass of water) to aid in establishing drainage or localizing the swollen area. After the swelling has pointed it may be lanced with a suitable sterile instrument.

(c) In cases where the patient complains of sharp pain when eating and biting and the pain is definitely localized in one tooth, there is little that can be done in the mouth. Patient is advised to make an effort to avoid that tooth or better, to avoid that side in chewing. A.P.C. plus $\frac{1}{4}$ grain Codeine can be administered.

3. Fractures of the Jaw.

First, control hemorrhage, using first-aid methods, remove debris and visible spicules of bone. Immobilize the parts as much as possible, fitting together the natural or artificial teeth into occlusion with one another. A four-tail bandage or Barton bandage should be applied for stability. A sailor's cap with rubber gloves pinned on either side as an elastic may also make a suitable temporary splint. Liquid foods must be prescribed.

4. Oral Pathology.

(a) Vincent's Infection or Trench Mouth. Symptoms: Foul taste, offensive odor, and sensitive, bleeding gums upon touching, accompanied by pain when swallowing. The gums and tissues around the teeth have irregular whitish-gray elevated ulcerations. The temperature of the patient increases and often there are glandular swellings in the neck.

Treatment: 16 ounces (480 cc.) of Hydrogen Peroxide (stock solution must not be more than four days old) may be combined with 10 drachms (40 cc.) of Fowler's Solution (prepared fresh) as a mouth wash four times daily and for not more than four days. One teaspoon of Sodium Perborate to one glass of warm water may be substituted as a mouth wash four times daily; after each meal and upon retiring. Mouth washes should not be swallowed. The liberal intake of fruits and fruit juices, if available, is of great value. Spices, condiments, hot foods, smoking, and alcohol should be avoided. Use separate mess gear, drink a quart of water daily and take a daily mild laxative such as milk of magnesia until condition subsides.

(b) Pericoronitis, or inflammation of the gum tissue over the crown of an erupting third molar or wisdom tooth may be very painful, especially upon opening the jaw. A small piece of iodoform gauze saturated with sulfathiazole and placed under the gum flap without pressure and left for twenty-four hours gives relief. One teaspoon of salt to a cup of warm water as a mouth wash every four hours reduces the soreness and should be continued until it subsides or until the services of a dental officer are available.

(c) Canker Sores: Painful circumscribed ulcers usually associated with gastro-intestinal distress or nervous upsets. Remove all irritants first. Isolate area and coat petrolatum around it. Then apply 10 % Silver Nitrate and allow to dry; after which have the patient wash his mouth with salt water. A mild laxative such as milk of magnesia should be given. Relief may be obtained in twenty-four hours.

(d) Bleeding Gums could be caused by many factors. If advice of dental officer is not available, sedative treatment may be used until such time as the true cause may be determined. A 5% solution of tannic acid in Lugol's Solution may be applied over the bleeding areas twice a day. Oral hygiene should be encouraged in these cases.

(e) Food Impactions: Evidenced by a tight feeling between the teeth with pain on mastication which may be relieved upon gritting the teeth. Use dental

floss between the teeth involved, followed by a tooth pick to remove any remaining food, being careful to avoid damage to the tissues.

Aspirin, anacin, and tincture of iodine should not be applied to the gums for the relief of toothache as they will inflict further damage to the tissues. (From course of instruction for Hospital Corpsmen detailed to independent duty given at Navy Yard, Portsmouth, N.H.) (I.F.)

* * * * *

Substances Producing Necrosis of the Islets of Langerhans in Rabbits: Dunn et al have found two substances which will produce actual necrosis of almost all of the islets of Langerhans of the pancreas in rabbits. Such an effect occurred following intraperitoneal inoculation of a synthetic styryl-quinoline, also following intravenous inoculation of alloxan. Alloxan is the ureide of mesoxalic acid. It is a component of the uric acid molecule.

The evidence of the necrosis of the islets of Langerhans is an initial rise of blood sugar, followed by intense hypoglycemia, which ends fatally with sub-normal temperature in 12 to 48 hours. The lesion is apparently caused by over-stimulation of the islets with overproduction of insulin, and later death of the cells from overstrain. (Lancet, Apr. 17, '43.)

* * * * *

At the annual session of the A.M.A., Dr. E.P. Joslin suggested that these substances may be harnessed in some manner so as to produce sufficient stimulation to overcome deficiency of the islands of Langerhans. (Editorial, J.A.M.A., July 3, '43.)

* * * * *

Sulfadiazine in Minor Respiratory Infections: In controlled experiments Rusk and van Ravenswaay found that Army personnel hospitalized with minor respiratory tract infections and treated with sulfadiazine showed no significant difference from the control group treated by A.P.C. capsules and other routine measures. Complications and length of hospitalization were approximately equal. Hence they conclude that recovery from a bad cold will not be accelerated by taking sulfonamide therapy. They calculated the cost of sulfa therapy was 17 times as great as that of ordinary medicaments. (J.A.M.A., June 19, '43.)

* * * * *

Public Health Foreign Report:

Plague

Basutoland:
(South Africa) For the period March 1-15, 1943, 4 cases of plague with 3 deaths were reported in Basutoland.

Public Health Report (cont.):Plague

- Indochina
Cochinchina: For the week ended February 27, 1943, 1 case of plague with 1 death was reported in Cochinchina, Indochina.
- Morocco
Casablanca Region: During the month of March 1943, 24 cases of plague were reported in the region of Casablanca, Morocco.
- Senegal, Thies
(Vicinity of): For the period May 1-10, 1943, 20 cases of plague, 3 of which were septicemic, with 17 deaths were reported near Thies, in the subdivision of Tivaouane, Senegal.

Smallpox

- Algeria: For the period April 11-20, 1943, 35 cases of smallpox were reported in Algeria, including 2 cases in Algiers and 12 cases in Cheliff.
- Belgium: For the week ended April 17, 1943, 1 case of smallpox was reported in the Province of Namur, Belgium.
- Iran: For the period December 6, 1942 to January 29, 1943, 203 cases of smallpox were reported in Iran. For the period February 13-26, 1943, 40 cases of smallpox were reported.
- Morocco: For the month of March 1943, 253 cases of smallpox were reported in Morocco, including 1 case in Casablanca, 6 cases in Port Lyautey, 5 cases in Safi, and 1 case in Rabat.

Typhus Fever

- Algeria: For the period April 11-20, 1943, 464 cases of typhus fever were reported in Algeria, including 27 cases in Algiers, 38 cases in Bone, 13 cases in Philippeville, 56 cases in Oran, and 10 cases in Mostaganem.
- Guatemala: For the month of April 1943, 78 cases of typhus fever with 17 deaths were reported in Guatemala.
- Hungary: During the week ended May 8, 1943, 34 cases of typhus fever were reported. For the week ended May 15, 1943, 22 cases of typhus fever were reported.
- Iran: For the period February 13-26, 1943, 172 cases of typhus fever were reported in Iran.
- Iraq: For the month of April 1943, typhus fever (endemic and epidemic) was reported in Iraq as follows: Amara, 58 cases, 5 deaths; Baghdad, 71 cases; Basra, 111 cases, 29 deaths;

Public Health Report (cont.):Typhus Fever

- Iraq: Diwaniyah, 20 cases, 2 deaths; Diyala, 16 cases, 3 deaths; Dulaim, 3 cases; Erbil, 6 cases; Hilla, 6 cases; Kirkuk, 30 cases; Mosul, 109 cases, 11 deaths; Sulaimaniya, 57 cases, 1 death.
- Week ended May 8, 1943, Baghdad, 13 cases; Basra City, 13 cases; Basra Liwa, 27 cases, 9 deaths; Kirkuk, 5 cases; Mosul including 5 Liwas, 39 cases, 4 deaths. Week ended May 15, 1943, Baghdad, 14 cases; Basra City, 17 cases; Basra Liwa, 6 cases with 6 deaths in the Basra area; Diyala, 2 cases; Erbil, 4 cases; Kirkuk, 2 cases; Mosul, 23 cases, 3 deaths; Sulaimaniya, 8 cases.
- Mexico: Typhus fever has been reported in Mexico, D.F., Mexico, as follows: Weeks ended March 6, 32 cases, 5 deaths; March 13, 25 cases, 3 deaths; March 20, 37 cases, 10 deaths.
- Morocco: For the month of March 1943, 3,759 cases of typhus fever were reported in Morocco, including 12 cases in Casablanca, 80 cases in Sale, 12 cases in Port Lyautey, and 21 cases in Safi. For the period April 11-20, 1943, 52 cases of typhus fever with 1 death were reported in Casablanca.
- Rumania: For the week ended May 8, 1943, 305 cases of typhus fever were reported in Rumania, including 19 cases in Bucharest. For the week ended May 15, 1943, 256 cases of typhus fever were reported in Rumania.
- Slovakia: For the week ended May 1, 1943, 6 cases of typhus fever were reported. For the week ended May 8, 1943, 17 cases of typhus fever were reported.
- Spain: For the week ended April 3, 1943, 9 cases of typhus fever were reported; for the week ended April 10, 1943, 11 cases.
- Turkey: According to information dated May 31, 1943, typhus fever has reached the epidemic stage in Turkey, and is said to be the worst since 1905. In one day 62 new cases were reported in Ankara.

Yellow Fever

- Belgian Congo: On April 16, 1943, 1 death from yellow fever was reported in Bondo, Stanleyville Province, Belgian Congo. (Pub. Health Rep., June 4, 11, & 18, '43.)

* * * * *

Optical Repair Units, Medical Department, U.S. Navy (Reprinted from Medical Supply News Letter, #6-43, N.M.S.D., Brooklyn, N.Y.): In accordance with a BuMed directive, a number of Optical Repair Units have been assembled, organized and equipped at the Brooklyn Naval Medical Supply Depot for further assignment. The departure of the first group from Brooklyn occurred on July 9.

MISSION: The mission of these units is (1) to provide emergency spectacle replacement and repair service without charge to Naval personnel on duty at places not accessible to civilian facilities; and (2) the initial supplying, without charge, of urgently needed corrective spectacles to Naval personnel under like circumstances.

TYPES OF UNITS: In order to render this service adequately and to make it available to the greatest number in a given area, two types of units have been designated: a BASE Type to be established at a relatively permanent location, and a MOBILE Type to be transported from one location to another according to the demands in the forward areas. The first group of these units will consist of two (2) Base and four (4) Mobile types.

BASE TYPE UNIT: Each Base Unit will be under the direct supervision of an Ensign, (H-V(S)) selected on the basis of previous optical experience and special training. He will be assisted by two Pharmacist's Mates selected on the basis of previous optical experience and special training.

It is contemplated that the Base type unit will be established at locations accessible to transportation facilities serving outlying ships and stations. The Unit is equipped to perform necessary repairs and replacements, which will include the fabrication of complete glasses, the replacement of broken lenses, and the replacement of spectacle frames. Complete new glasses or lens replacements can be produced either on prescription or by duplicating broken lenses. Restrictions on the service to be rendered by the Base type Unit are as follows:

- (a) In fabricating complete new glasses cosmetic value will be sacrificed in favor of effective optical service. Issue frames will be of round-eye, rimmed construction. No unusual styles or odd-shaped frames will be available.
- (b) No tinted or glare-absorption lenses will be available for this prescription service.
- (c) The stock lens assortment will be arranged in 0.25 diopter graduations. Prescriptions for such powers as a + 2.12 will be filled to the nearest 0.25 diopter.
- (d) There are no facilities for doing rimless work and when replacement of lenses contained in rimless mountings is required, it will be accomplished by issuing a complete new pair of lenses mounted in an issue frame.
- (e) No provision has been made for dispensing bifocals. Bifocal requirements will be served by issuing single vision glasses, either for reading only, or for both distance and reading, according to the condition of distance vision.
- (f) There will be no facilities for surface grinding, at least until a demand for complicated prescriptions is found to be substantial.
- (g) Prism elements called for in prescriptions will be provided only to the extent permitted by decentration (possibly .5 prism diopter for every 1.00 diopter of power).

(h) Units will not be prepared to deal with problems relating to precision optics, fire control apparatus or photographic lenses.

(i) Units will not have equipment for refraction, orthoptic training, or allied fields of endeavor.

EQUIPMENT: The Base type Unit is a self-contained outfit, equipped to mark, cut, and edge lenses; to assemble lenses and frames; and to execute solder repairs. The equipment includes a double-spindle automatic lens-edger on a stand, a hand lens-edging machine mounted on a sturdy work-bench, a lens-cutting machine, lensometer, lens measure, soldering equipment and miscellaneous small tools, rules, pliers and gauges.

The expendable stock consists of 4,500 pairs of uncut lenses, 3,000 frames complete, 1,500 pairs of extra temples, and miscellaneous screws, repair pads, lens washers and spectacle cases, considered adequate for a six-months supply. All stock is contained in three (3) six-drawer cabinets. The assortment of lenses and of frames and temples is as follows:

(a) Lenses:

<u>Convex Spheres</u>	<u>Concave Spheres</u>	<u>Plano Cylinders</u>
480 prs. 0.00 to 2.00	683 prs. 0.25 to 2.00	338 prs. 0.25 to 2.00
177 prs. 2.25 to 4.00	82 prs. 2.25 to 3.25	16 prs. 2.25 to 3.00
18 prs. 4.25 to 6.00		6 prs. 3.25 to 3.50
<u>Plus with Plus</u>		
1246 prs. 0.25 to 2.00 sph. with 0.25 to 1.50 cyl.		1032 prs. 0.25 to 2.00 sph. with 0.25 to 2.00 cyl.
149 prs. 2.25 to 3.00 sph. with 0.25 to 1.50 cyl.		149 prs. 2.25 to 3.00 sph. with 0.25 to 1.25 cyl.

(b) Frames:	<u>Bridge Sizes</u>	<u>20mm</u>	<u>22mm</u>	<u>24mm</u>	<u>26mm</u>
	40mm eye	450	600	300	300
	42mm eye	375	375	300	300

(c) Temples:	900 pairs 6"
	3375 " 6½"
	225 " 7"

The Base Type Unit supplies and equipment are shipped in 10 cases and 1 crate, the overall cubic measurement of which is $142\frac{1}{2}$ cu.ft.; the overall weight - 2557 lbs.

MOBILE TYPE UNITS: Each Mobile type Unit will be in charge of an Ensign, (H-V(S)) selected on the basis of previous optical experience and special training. He will be assisted by a Pharmacist's Mate selected on the basis of previous optical experience.

It is contemplated that Mobile Units will be transported from one point to another, according to the demands for service - this in order that personnel

in locations not accessible to Base type Units may be serviced. For the sake of mobility, the Mobile Unit is designed to perform a simple, speedy replacement service, utilizing previously edged lenses of one size and shape. Most replacements will be accomplished by issuing glasses complete, the pre-edged lenses being mounted in 40 mm round frames. Such replacements can be produced either on prescription or by duplicating the old lenses. All restrictions on the service rendered by the Base type Unit apply also to the Mobile Unit and there is the additional restriction enforced by the stock of pre-edged lenses and 40 mm eye frames and by the lack of cutting and edging equipment. For example, a single broken lens formerly contained in any frame of a different size or shape than 40 mm round, will be replaced by issuing a complete new pair of glasses. Due to the fixed size and shape of the issue frame, an attractive fit will not always be possible. But it has been considered advisable to sacrifice cosmetic value for prompt and effective visual help.

EQUIPMENT: Stock and equipment for the Mobile type is contained in three (3) chests (packed in two (2) cases), of which two are three-drawer cabinets and the third is a chest containing a folding work-bench, small tools, rules, taps, pliers, lens-measure, axis-marking cards, protractors, etc. The expendable stock consists of 1,000 pairs of 40 mm round lenses, 800 frames complete, 160 pairs of extra temples, miscellaneous screws, repair pads, lens washers and spectacle cases, which is considered adequate for a six-months supply. The assortment of lenses, frames and temples is as follows:

(a) Lenses:

Convex Spheres

106 prs. 0.00 to 2.00
40 prs. 2.25 to 4.00
4 prs. 4.25 to 6.00

Concave Spheres

154 prs. 0.00 to 2.00
17 prs. 2.25 to 3.25

Plano Cylinders

73 prs. 0.00 to 2.00
7 prs. 2.25 to 3.50

Plus with Plus

275 prs. 0.25 to 2.00 sph.
with 0.25 to 1.50 cyl.
37 prs. 2.25 to 3.00 sph.
with 0.50 to 1.00 cyl.

269 prs. 0.25 to 2.00 sph.
with 0.25 to 2.00 cyl.
21 prs. 2.25 to 3.00 sph.
with 0.25 to 2.00 cyl.

(b) Frames:

	<u>Bridge Sizes</u>	<u>22mm</u>	<u>24mm</u>
40mm eye		360	440

(c) Temples:

192 pairs	6"
720 "	6½"
48 "	7"

The overall cubic measurement of the two cases containing Mobile Unit supplies and equipment is 41 1/6 cu. ft. The overall weight is 722 lbs.

Pursuant to the requirement in the Naval Appropriation Act for the fiscal year 1944, regulations governing the operation of these Units will be promulgated by the Navy Department.

* * * * *

A Packer's Plea (Reprinted from Medical Supply News Letter #6-43, N.M.S.D., Brooklyn, N.Y.): Experience of old hands in unpacking requisitions shows that the average apparent shortage in a requisition is the lack of respect for the bundles or bunches of excelsior, crumpled paper, folded pieces of cardboard and such material as found in a repacked case. In packing small bottles, vials, etc., it is essential that they be well padded and that small instruments and similar items be protected by a folded piece of cardboard. Therefore, in the unpacking, BE SURE that no items lurk in the depths of the packing material.

All small items of a requisition filled at N.M.S.D., Brooklyn, are now being packed in a carton, utilizing the original cardboard containers of the items for their protection. This carton is placed in the last case closed and bears the label "Important - Look inside for small items." Recently an activity reported the shortage of two carrier cartons containing one-eighth ounce bottles of codeine sulfate. The same requisition requested the same amount of acetophenetidin. The activity, in unpacking their requisition, found no codeine and reported it short. At the time of packing this requisition, the carrier cartons of codeine sulfate and acetophenetidin were of identical size and appearance, but each labeled properly. When the activity was asked if the acetophenetidin requested on their requisition was the correct amount, they found their codeine. Moral -- Check all items and packing material first.

Each box, crate and package of supplies packed at N.M.S.D., Brooklyn, contains a printed slip on which is recorded the identifying number of the packer and the following request: "Please return slip if contents do not check with packing list."

Failure of consignees to comply with this request delays corrective action for all concerned.

Specific information is desired as to whether or not an item was short from carrier carton or original package. Example: An activity requested 100 bottles codeine sulfate. Four original sealed carrier cartons - 25 bottles each - were furnished. The activity reported one bottle short from two carrier cartons. In reporting discrepancies of this or similar types, the name of the manufacturer and the label from the carton or container should be furnished.

* * * * *

Availability of the Bumed News Letter at Small Craft Bases: A number of requests have been received for the Bumed News Letter from destroyers, submarines and torpedo boats. It is regretted that it is impractical to place individual commands, to which medical officers are not attached, on the mailing list for the Bumed News Letter, or to send the Letter to Hospital Corpsmen on such independent duty. It is hoped that the Senior Medical Officers of bases to which such craft are attached may be able to maintain a file of the Bumed News Letters, and that this file may be made available to Pharmacist's Mates of such ships when in port.

Psychoneuroses in War Time: While the psychoneuroses in war time are not entities and are not even particularly new, they have been given, only belatedly, attention commensurate with their frequency and importance. Despite the fact that the diagnosis of psychoneurosis is often made by exclusion, absence of body disease is not a criterion for its diagnosis. Diagnosis is properly based on each individual's adjustment to his stresses. Any stress present for a sufficient period of time will ultimately produce symptoms, even in those not predisposed. The varieties of these are:

- (1) Substitution disorders (hysteria), in which the patient avoids tension and anxiety by mimicry and feigning.
- (2) Invalidism (neurasthenia) is the psychoneurotic pattern of adaptation when there is a pronounced energy defect in a person goaded by ambition.
- (3) The compulsive-obsessive state (psychasthenia) is the psychoneurotic pattern of reaction, characterized by uncontrolled and repetitious automaticity of feelings and actions.
- (4) The anxiety neuroses are the typical adaptation patterns of persons with pathological self-preservation impulses and reactions. These states are consequently most frequent in combat situations.
- (5) Hypochondriacal disorders are psychoneurotic reaction patterns in persons who have persistent delusions about the shape and functions of their bodies.
- (6) Post-traumatic neuroses are, for the most part, affective disorders (mood disturbances), resulting from trauma.

The recognition of all psychoneuroses is prerequisite to a successful treatment. This is more easily accomplished if all psychoneuroses can be viewed in the light of the above described groups. (Ziegler, Ann. Int. Med., June '43.)

* * * * *

Studies on Liquid Plasma During Second Year of Storage: "Preliminary chemical findings on 18 samples of plasma preserved in the liquid state for 15 to 24 months at room temperature are presented. During storage of such duration the non-protein nitrogen content, the amino acid nitrogen and the 'residual' non-protein nitrogen all appear to increase slightly. No chemical changes can be detected in the total protein albumin or globulin content but it appears from the increase in N.P.N. and amino acid N content that from 0.5 to 1.0% of the protein is hydrolysed. On this basis, therefore, 99.0 to 99.5% of the precipitable protein can be said to remain intact from the chemical point of view. Two electrophoretic patterns on plasma 15 and 24 months old were within normal limits. In view of the above findings, it may be tentatively recommended that when plasma is prepared by a 'closed' system with scrupulously aseptic technic, its expiration date when preserved in the liquid state at room temperature in a moderate climate may be extended from the present limit of one year to 18 months and probably to two years." (Project #X-105, N.M.R.I.)

The permissible temperature range of preservation probably lies between 15° and 30°C. (59° and 86°F.). Below this range excessive fibrin precipitation may occur and above this range excessive protein denaturation takes place. (L.L.N. & E.L.L.)

* * * * *

Dental Prosthetic Treatment: It has come to the attention of the Bureau that occasional excessive travel by individuals in need of dental prosthetic treatment has occurred because of the lack of a ready reference to stations recently authorized to provide such treatment.

The activities listed below are or will be authorized to provide this type of dental service.

NAVAL SHORE ACTIVITIES AUTHORIZED TO PROVIDE DENTAL PROSTHETIC TREATMENT:

FIRST NAVAL DISTRICT

NAS, Argentia
 *RecS, Boston, Mass.
 HOSP, Chelsea, Mass.
 *NTS, Newport, R. I.
 NYD, Portsmouth, N. H.
 NAS, Quonset Pt., R. I.
 HOSP, Newport, R. I.

THIRD NAVAL DISTRICT

NYD, Brooklyn, N. Y.
 SubB, New London, Conn.
 HOSP, St. Albans, N. Y.
 HOSP, Sampson, N. Y.
 *NTS, Sampson, N. Y.

FOURTH NAVAL DISTRICT

HOSP, Philadelphia, Pa.
 NYD, Philadelphia, Pa.

SEVENTH NAVAL DISTRICT

NOB, Key West, Fla.
 NAS, Miami, Fla.

FIFTH NAVAL DISTRICT

(inc. Pot. & Sev.R.Comd.)

USNA, Annapolis, Md.
 HOSP, Bainbridge, Md.
 *NTS, Bainbridge, Md.
 D.Sch., Bethesda, Md.
 NOB, Norfolk, Va.
 HOSP, Portsmouth, Va.
 NYD, Portsmouth, Va.
 HOSP, Quantico, Va.
 NCTCtr., Williamsburg, Va.

SIXTH NAVAL DISTRICT

NYD, Charleston, S. C.
 NAS, Cherry Pt., N. C.
 HOSP, Jacksonville, Fla.
 MB, New River, N. C.
 MB, Parris Island, S. C.

TENTH NAVAL DISTRICT

NOB, Guantanamo Bay, Cuba
 NAS, St. Thomas, V. I.
 NAS, San Juan, P. R.
 HOSP, Trinidad, B. W. I.

EIGHTH NAVAL DISTRICT

HOSP, Corpus Christi, Tex.
 NABD, Gulfport, Miss.
 NATTCtr., Memphis, Tenn.
 HOSP, New Orleans, La.
 NS, New Orleans, La.
 NATTCtr., Norman, Okla.
 NAS, Pensacola, Fla.

NINTH NAVAL DISTRICT

HOSP, Great Lakes, Ill.
 NTS, Great Lakes, Ill.
 *NAS, Grosse Ile, Mich.

THIRTEENTH NAVAL DISTRICT

NYD, Bremerton, Wash.
 *NAS, Dutch Harbor, Alaska
 NTS, Farragut, Idaho
 NAS, Kodiak, Alaska
 HOSP, Seattle, Wash.
 NAS, Whidbey Island, Wash.

TWELFTH NAVAL DISTRICT

NAS, Alameda, Calif.
 *DD, Hunter's Pt., Calif.
 NYD, Mare Island, Calif.
 HOSP, Oakland, Calif.
 *CBR&RCtr., Pleasanton, Calif.
 *PDCtr., Pleasanton, Calif.

MISCELLANEOUS

NAS, Bermuda
 NOB, Oran, Algeria
 NOB, Samoa

NAVAL SHORE ACTIVITIES AUTHORIZED TO PROVIDE DENTAL PROSTHETIC TREATMENT (cont.):ELEVENTH NAVAL DISTRICT

MB, Camp Elliott, Calif.
 HOSP, Corona, Calif.
 HOSP, Long Beach, Calif.
 NABD, Port Hueneme, Calif.
 HOSP, San Diego, Calif.
 *MCB, San Diego, Calif.
 NOB, San Diego, Calif.
 *NTS, San Diego, Calif.

FOURTEENTH NAVAL DISTRICT

NAS, Kaneohe Bay, T. H.
 HOSP, Pearl Harbor (Aiea), T. H.
 NYD, Pearl Harbor, T. H.

FIFTEENTH NAVAL DISTRICT

HOSP, Balboa, C. Z.
 *SubB, Coco Solo, C. Z.

*Proposed, not yet effective.

* * * * *

Education programs for hospital corpsmen, for medical officers and dental officers are being carried on at many naval stations within and without the continental limits of the United States. Extracts from a summary of such a program of education, as carried on at the Norfolk Navy Yard, Portsmouth, Virginia, are reprinted below with the hope that the information contained therein may be of aid to other activities in planning or carrying on such educational courses.

* * * * *

Education, Hospital Corpsmen: Hospital Corps instructions from the Handbook, ten hours a week. Additional subjects:

- (a) The handling of the wounded, as found aboard ship, battle front and major casualties. Actual subjects are used for demonstrations of all kinds of wounds, burns and injuries that are most common types reported both in field and shipboard engagements.
- (b) The actual administration of intravenous medications and plasma, not only as given at hospitals but as in the field with make-shift apparatus.
- (c) Instruction by a dental officer in the use of dental instruments in dental emergencies. How to relieve pain and the medicaments to be used.
- (d) The actual use of the resuscitator, mine safety appliances and gas warfare. Two large gas decontamination units are available for gas training.

Education, Medical and Dental Officers:

- (a) Staff conference, one hour weekly on clinical material and post mortem on mistakes.
- (b) Military Indoctrination Course in booklet form. The officer is permitted to retain his copy for his personal use, as it is separate from the regular Yard Medical Department Organization and Indoctrination Folder which is returned on detachment of an officer.

(c) There are two classes a week by a medical officer for the dental officers in Ship and Field First Aid, which includes emergency first aid, transportation, resuscitation, intravenous medication and plasma to the injured, and duties at battle and dressing stations.

Other Items of Interest:

(a) There are sixteen fully equipped air raid or casualty stations, in addition to the eleven dispensaries and one portable first-aid station. These stations are fully equipped with dressings and instruments under lock and key for emergency; battery lights, water and a stand-by crew 24 hours a day of trained Medical Department and civilian personnel to take care of any catastrophe due to an air raid.

(b) Eighty-two Yard trucks are designated and equipped as ambulances, with shielded lights, Red Cross flags, drivers with Red Cross brassards, and stretcher cots. These ambulance trucks proceed to the Air Raid Stations on the alarm. Their routes to station and evacuation to hospital are so laid out that there are no crossings. Ambulances have been known to collide in the confusion of disasters.

(c) Three hundred and fifty stretcher cots and 150 Thomas splints were built in the Yard to equip the casualty stations. All splints are prepared here.

(d) There has been established, with the help of the local Medical Director of Civilian Defense a fully equipped emergency hospital in the city, of 125 beds, to receive civilian casualties from the Yard in the event of air raids. This hospital was established with funds voluntarily contributed by the Yard personnel and by citizens of the city of Portsmouth, Virginia.

(e) The Yard Medical Department has a 1000-unit blood bank now completed. Funds were obtained from the Office of Civilian Defense.

Dispensaries and Dental Facilities:

(a) One large air-conditioned Main Dispensary with ten sub-dispensaries, and one portable first-aid station.

(b) Sub-dispensaries around the docking area serve a dual purpose; to care for civilian workers, also to afford space and facilities for the medical officers of ships to hold sick call or process the crew, when their sick bays are out of commission.

(c) This Yard has realized an old dream of the last War. When a ship requires extensive repair, the crew is removed to the barracks area, where they live in clean, comfortable quarters with all needed messing and recreational facilities. The officers live in the B.O.Q. At this barracks area is a large two-story dispensary where office space is available for the functioning of the ship's Medical Department. This dispensary is complete in every medical and dental detail, with two wards for the care of the sick.

(d) The dental facilities are excellent, comprising a large prosthetic laboratory and twelve dental operating units and an X-ray unit at the Main Dispensary, with two outlying dental clinics consisting of six operating units and an X-ray unit at one and two dental operating units at the other.

Medical and dental stores are also scattered at various locations in the Yard in store rooms, in addition to those in the sub-dispensaries so that medical supplies and equipment would not be completely destroyed by the destruction of any one or even several Medical Department units.

Here is one thing which it is believed may be unique in medical organization; in addition to the Commandant's Memorandum, which goes out to all incoming ships, telling them of the medical facilities available at this Yard, a medical officer detailed by the Yard Medical Department meets all ships on arrival in the Yard and goes over quarantine and food regulations, explaining to the medical and dental officers just what is provided for them and offers the Yard's facilities for their use. This has been most helpful to Reserve officers. (J.F.H.)

* * * * *

Manual Methods for Artificial Respiration are Preferred Over Mechanical Devices: The Committee on Industrial Medicine of the National Research Council and a conference group composed of specialists conversant with problems of artificial respiration report (July 7, '43) in part, as follows:

"...manual methods of supplying artificial respiration are admittedly effective when properly applied but, nevertheless, have certain obvious limitations.....

"...this Conference has come to the conclusion the manual methods of artificial respiration are effective, can be applied without delay or dependence upon mechanical equipment, and by personnel easily trained. Manual methods are the methods of choice, and this is the Conference's considered opinion.

"The Conference is therefore led to approve the utilization of several manual maneuvers for artificial respiration, (including Schafer, Sylvester, Eve and their modifications) and where these are impossible or subject to delay, the direct mouth-to-mouth or mouth-to-nose inflation.

"The Conference furthermore approves the employment of very simple mechanical devices where manual methods are not feasible or where oxygen is needed and available. The Conference would specify that these mechanical devices be of the following characters: (1) as simple mechanically as possible; (2) as small and light as possible; (3) provide only positive pressure with limit of 10 mm. Hg.; (4) provide no negative pressure."

The Bureau of Medicine and Surgery concurs in the above resolutions. (E.W.B.)

* * * * *

BUREAU OF MEDICINE AND SURGERY

From: The Chief of the Bureau of Medicine and Surgery. P3-3/P3-1(081)
To: All Ships and Stations. X:FHM
Subject: Radar, No Evidence of Injury to Personnel; Discontinuation of "Dental Film--Paper Fastener Test." 25 June 1943
References: (a) BuMed Form Ltr. P3-3/P3-1(081) of 5 Aug. 1942; N.D. Bul. of 15 Aug. 1942, R-445.
(b) BuMed Form Ltr. P3-3/P3-1(081) of 24 Nov. 1942; N.D. Bul. of 15 Dec. 1942, R-1083.

1. In reference (a), the Bureau of Medicine and Surgery called attention to the fact that X-rays of the "soft" type are emitted by radar equipment, and requested that radar personnel be examined periodically for evidence of X-ray effects and that a "dental film--paper fastener test" be used to determine roughly the degree of exposure.

2. During the three months following the distribution of this letter, more than 2,000 dental films, exposed as directed, were received. None of these revealed an exposure which definitely could be diagnosed as injurious.

3. In reference (b), the Bureau modified its instructions, allowing the development of dental film tests at the nearest naval activity with the provision that positive films be reported. The reports received so far have not contained any films indicating an exposure which could be considered dangerous in any degree to the subjects of these tests.

4. Some medical officers in special reports have called attention to clinical conditions in radar personnel which possibly could be due to X-rays. Upon investigation, none of these suspicions have been verified. A study of the personnel has recently been concluded at the Radio Materiel School where radar operators and repair men are trained. The findings of these studies were entirely negative for clinical and laboratory evidence of injurious effects.

5. These data seem to indicate that there is practically no danger of X-ray effects on radar personnel provided the equipment is shielded and operated as directed. The routine use of the "dental film--paper fastener test" may therefore be discontinued.

ROSS T. McINTIRE.

BUREAU OF MEDICINE AND SURGERY

From: The Chief of the Bureau of Medicine
and Surgery.
To: All Ships and Stations.

Subject: Prosthetic Dental Treatment - Authorization of.

P5-2(102),
D:HGB
17 June 1943

References: (a) Man. Med. Dept. Par. 240.
(b) Man. Med. Dept. Par. 274(c).
(c) BuMed Circ. Ltr. 28 October 1942, P5-2(102),
N.D. Bul. of 15 November 1942, R-933.

1. Reference (c) is hereby canceled.

2. Advance authority, as required by reference (a) and as provided in the case of personnel on duty at sea by reference (c), is granted activities containing authorized prosthetic facilities to furnish prosthetic dental treatment to all personnel of the Navy, Marine Corps, and Coast Guard on active duty when such treatment is deemed by the dental officer to be necessary for the promotion of physical fitness.

3. The procedure in effecting treatment shall be as follows:

(a) In each case NAVMED Form L shall be made out in triplicate by the dental officer, omitting entries inappropriate to this procedure, after the patient's mouth has been prepared for prosthesis.

(b) Arrangements, as regulated by local authority, may then be made directly with a convenient prosthetic activity for the necessary treatment.

(c) Upon completion of treatment, appropriate data shall be entered in both original and pink copy and the former submitted to this Bureau with the monthly letter noted in reference (b) by the activity furnishing the prosthesis.

4. Prosthetic dental treatment will be deemed necessary for physical fitness, within the meaning of the term as noted in paragraph 2, only in cases involving the restoration of extensive loss of masticatory function, or when operative procedures would fail to effect satisfactory dental function. Such treatment may be extended also in cases where the defects cannot be classified within that category, providing such defects resulted from injuries sustained in the performance of duty.

5. There is no desire to restrict unreasonably the scope of professional treatment but it is emphasized that prosthetic procedures are to be used only in conformity with the general spirit of paragraph 4. For example, inlays will not be used to restore carious teeth when simpler procedures would suffice, nor will small replacements be supplied for esthetic reasons in cases of losses of teeth not occasioned by injuries suffered in the performance of duty.

ROSS T. McINTIRE.

BUREAU OF MEDICINE AND SURGERY

A2-2/EN10(113-38)

5 July 1943

From: The Chief of the Bureau of Medicine and Surgery.
To: All Ships and Stations.

Subject: Designation of Aviation Squadrons (or Units) on Form F
Card - Instructions for

References: (a) Pars. 2405, 2407, Manual of the Medical Department,
U.S. Navy, 1939.
(b) BuMed ltr. A2-2/EN10(113-38), dated 3 Oct. 1942
(Change in par. 2405(b), Manual of the Medical Department,
U.S. Navy, 1939.)

1. Reference (a) requires that an individual statistical report
of a patient be submitted to the Bureau, and reference (b) substituted new
instructions for numbered lines on Form F card.

2. In order to designate aviation squadrons (or units), the in-
structions contained in paragraph 2407(f) stand modified to read:

"(f) Submarines, Aviation Squadrons (or Units) -- In the preparation
of Form F cards and monthly Form F for submarine or aviation personnel,
the procedure shall be the same as in subparagraphs (a), (d), or (e),
above, with the exception that line 11 of the Form F card shall also
carry the name of the submarine, aviation squadron (or unit). Examples:
Submarine Base, New London (U.S.S. S-30); N.A.S., Norfolk, Virginia
(VP-201); U.S.S. Ranger (VF-22); U.S.S. Albemarle (VP-206)."

3. This modification of procedure will be embodied in the next
recommended changes in the Manual of the Medical Department.

ROSS T. McINTIRE.

BUREAU OF MEDICINE AND SURGERY

L1-1-1935/EN(024-35)

June 4, 1943.

From: The Chief of the Bureau of Medicine and Surgery.
To: The Commandants of Naval Districts, River Commands
and Air Training Commands.
The Commandants and Commanding Officers of all Shore Stations.
The Commanding Officers, U.S. Marine Corps.

Subject: Uniform charge for interdepartmental hospitalization.

References: (a) Copy of Resolution Adopted by The Federal Board of Hospitalization October 28, 1942, approved by the President, December 17, 1942.
(b) Bureau Circular Ltr. F - Subject: Supernumerary Patients, Appendix D., Manual of the Medical Department, U.S.N.

Enclosure: (A) Copy of reference (a).

1. Enclosure (A) is forwarded for information.

2. Effective from and after July 1, 1943, reference (b) is modified in that the rate of hospitalization will be changed from \$3.75 per diem to \$4.25 per diem.

3. Net earned amounts received locally for hospitalization of supernumerary patients in naval hospitals shall be deposited as a credit to the appropriation "Medical Department, Navy". At other activities these net collections shall be deposited and credited as follows: To the appropriation "Medical Department, Navy" - \$3.45 per diem and the remaining \$0.80 per diem to the credit of the appropriation charged for the cost of furnishing the subsistence.

4. Specific instructions regarding the rate of hospitalization of dependents will be issued by dispatch at a later date to activities authorized to hospitalize dependents.

L. SHELDON, JR.
Acting

BUREAU OF SUPPLIES AND ACCOUNTS

From: The Chief of the Bureau of Supplies
and Accounts.

To: All Ships and Stations.

Subject: National Service Life Insurance and U.S. Government Life Insurance--Waiver of Premiums on Account of Total Disability.

WAR DEPT. S/N

FB/L13-2(25)
(A-1)
3 July 1943

1. A recent decision by the Administrator of Veterans' Affairs stresses the need of proper advice and assistance to disabled servicemen. In the case in question, a man was discharged after being hospitalized for many months. At the time of discharge his allotment for National Service Life Insurance was stopped and the insurance lapsed because of nonpayment of premiums. Several months after discharge, he died as a result of his injuries. No application for waiver of premiums had been made by him or by any other person acting in his behalf prior to the date of death. Although the fact was established that he had been totally disabled from the date of entry into the hospital, and that such total disability lasted for more than six months prior to the date of death, waiver of premiums could not be granted upon application made in his behalf after his death and insurance benefits were not payable.

2. All persons in naval hospitals who are totally disabled or who are suffering from wounds which may eventually result in total disability, either temporary or permanent, should be fully advised concerning the waiver provisions of their insurance and given every assistance needed. This is especially important if they are to be discharged from the service when able to leave the hospital.

3. Premiums on National Service Life Insurance may be waived on account of total disability existing for a period of six months or more and commencing subsequent to the date of application for insurance. Application for waiver of premiums should be made by the insured, or if he is unable to apply, may be made in his behalf by another person, such as a hospital official, a relative, or the beneficiary under the insurance. Premium payment must be continued either by allotment or by direct remittance until the insured is notified by the Veterans' Administration that waiver has been granted, at which time premiums paid after the effective date of waiver will be refunded to the insured.

4. Application for waiver of premiums on National Service Life Insurance must be made prior to the death of the insured.

5. Premiums on U. S. Government Life Insurance may not be waived on account of total disability (not permanent) unless the policy includes the special total-disability provision granted under section 311 of the World War Veterans' Act. Premium payments on this form of insurance (without total disability provision) must be continued throughout the period of total disability unless such disability becomes permanent in nature.

F. E. McMILLEN.